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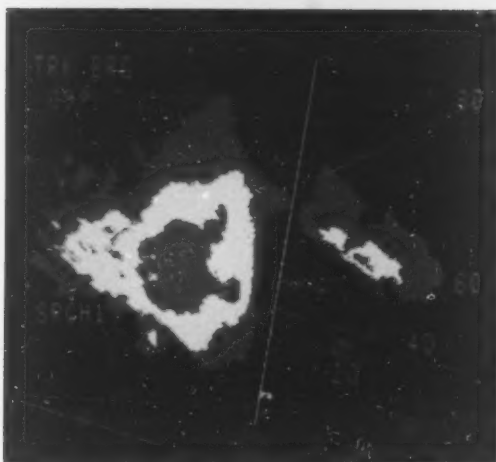
Business
and commercial **Aviation**^R

AUGUST 1987 \$4.00

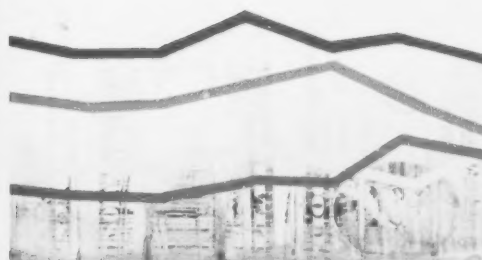
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**B/CA
Analysis®:
IAI Astra**



Bendix/King RDS 80 Radars



1987 B/CA Salary Survey

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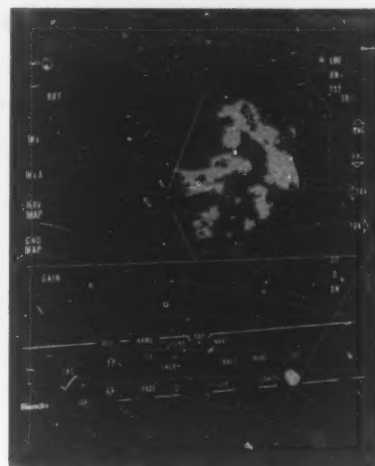
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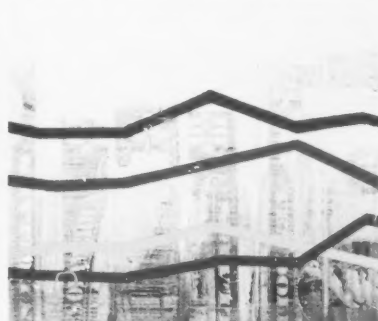
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Upgrades to Series 80 radars overcome former design limitations, thereby yielding performance improvements.

1987 B/CA Salary Survey 54



This year's survey once again illustrates that median flight department salaries and benefits are on the upswing.

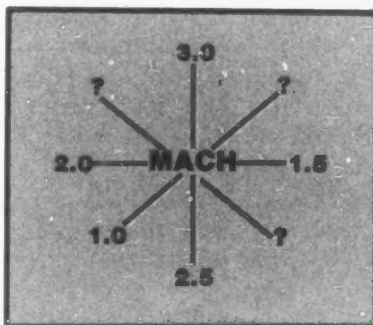


Designed for distance and speed, the Astra is using the record books to prove its point.

CLEARANCE DELIVERY

"Just what our community needs," was the way one flight department manager described it. "Yes, going that fast would be great, but are we ready technically for that much capability," was the comment of another operator of business jets. "What about the cost? Could we afford it?"

What each of these aviation people was referring to is a supersonic business jet — an aircraft designed to meet the needs of the business traveler and possibly also serve various elements of commercial transportation.



Several serious design studies of a small, civil-use supersonic aircraft have been made. One of note was

done several years ago by Parks College of St. Louis University, and the National Aeronautics and Space Administration has looked at the technical aspects of such an aircraft. Rumors suggest that the advanced design departments of several larger manufacturers of general aviation aircraft either have considered or are now considering supersonic business jets, and a close associate of the late Bill Lear flatly stated that had Lear lived there would be at least a preliminary design circulating among potential operators of such an aircraft.

Training for Wind Shear 64



A new, multimedia product provides "must know" information concerning the effects of wind shear and possible avoidance procedures.

AIRMANSHIP: The Eyes Have It 70



Many types of eyeglasses are available to pilots who suffer from the inevitable degeneration of eyesight.

Many questions exist, however, concerning the demand for such an aircraft, what characteristics are needed and desired, how the business aviation community would perceive a supersonic business aircraft and the general level of interest in supersonics for the executive traveler. Also, are there other areas, such as international small package delivery and super first-class airline service, that need a small supersonic aircraft?

The NBAA will be addressing these and other questions about a small supersonic transport at its annual convention this fall, and

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B/CA will be participating in the panel discussion of the subject. But your help is required. Please participate, even if you can't be in New Orleans for this year's NBAA gathering, by responding to the questionnaire on page 52. Your opinions are very important, and we appreciate your cooperation.

THE COVER

Staff Editor Alan Staats photographed IAI's Astra. Bendix/King supplied the photo of its RDS 80 radar, and the 1987 Salary Survey illustration was created by Dennis Falcon and B/CA's Art Department.

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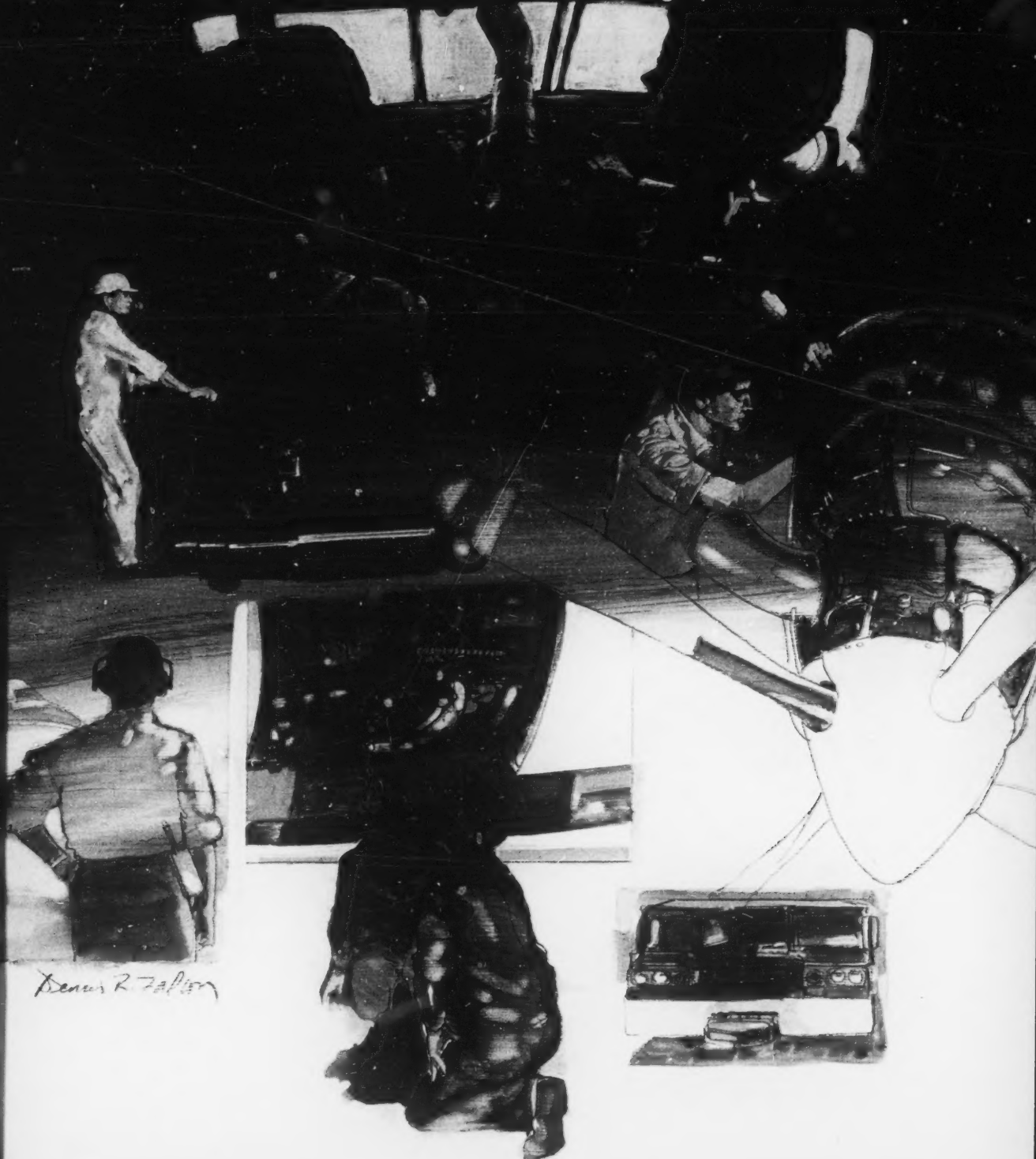
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1987 B/CA SALARY SURVEY

Overall, salary and benefit figures are up as corporate flight departments continue their attempts to stem the tide of crewmembers "moving up to the airlines."



by Alan Staats and Jessica Salerno

According to the data collected by B/CA for the 1987 Salary Survey, the reported median flight department personnel salaries have increased again over the previous year. In most cases the increases have moderated with an overall average median salary increase calculated to be 7.79 percent. This figure is roughly 2.29 percent above the latest available annualized Consumer Price Index figures which, as of this writing, show an increase in the cost of living of roughly 5.6 percent. In some areas, however, the median increases have been extreme, and there are a number of reasons for these changes.

In some cases, particularly in the median figures for light and medium jet salaries, the increases are most often the result, according to those with whom B/CA spoke, of downsizing the fleet to smaller aircraft, or consolidating two or more existing fleets as the result of mergers and acquisitions. In the words of one chief pilot "Just because we're flying [light and medium jets] now, where we used to fly two [heavy jets] doesn't mean my people have less responsibility or that their jobs are easier. . . if anything we're flying more hours, and due to revised company policy on utilization, we're carrying more people. In our case, as I'm sure it is with many other flight departments, our pay is not dependent upon whether or not the boss can stand up and walk around in back. My salary, my crew's salaries, and my mechanics' salaries are based on the investment in time we have put into this company, which is substantial, and the responsibility we've taken on."

Another reason why the median figures show such large changes, (both plus and minus) is that the current airline hiring boom is responsible for fairly high turnover rates, especially among young first officers. According to one chief pilot, "In one two week period I lost three crewmembers; two went to American, and one to Piedmont. We now have three aircraft and one pilot, me. I've hired replacements, but this time I went with older guys with a lot of time and type ratings, and I had to pay for them dearly. But, at least I'm fairly certain that they're not going to come to me two weeks after they get back from recurrent training and tell me they just heard from the majors, thanks a lot, see you around."

On the minus side, many flight department managers spoke of becoming leery of younger pilots, and some operations, as a result, have lowered their

initial pay scales. "Why," asked one director of flight operations, "should I pay top dollar to a kid who I know is going to leave in a year or two when he hears from an airline? My pay scale for senior pilots and people who have been with us for a while is very competitive; but I'm sorry, I've been burned too many times by first officers who said corporate aviation is where it's at and where they want to be, and then left me hanging with two weeks notice when the airlines called. So you start low with us, and if you stay, fine, you'll make top dollar in a couple of years."

Finally, the research done to obtain this year's salary figures revealed disturbing evidence that many companies are leaving business aviation altogether. Approximately 20 percent of the control group of flight departments surveyed over the years by B/CA have closed their flight departments, and many of the personnel contacted felt that their companies would remain out of the business aviation arena. In a majority of these cases, the companies were operating fairly small flight departments, usually flying a turboprop or light jet. There were, however, several very large flight departments in the control group that shut down their flight operations as well.

Hence, B/CA, in order to obtain what we feel are representative salary figures, found it necessary to add new members to the control group that were as geographically and operationally diverse as those lost to the original control group. As a result, this year's figures represent an approximately 80 to 20 mix of existing to new survey participants, and many of the somewhat startling increase and decrease figures are a direct result of that influx of new participants, and the salaries they pay.

Benefits

On the subject of benefits, a director of operations for a major Northeast corporation explained one of the options available to his employees: the 401K tax deferred savings plan. "If a pilot works here," he said, "and puts the maximum amount [six percent of his gross salary] into his 401K savings plan, which the company then matches dollar for dollar, at current [interest] rates, he'll have \$1 million [pre-tax] in the plan when he retires 30 years later."

With 54 percent of those responding to our survey having 401K savings plans in place, this was the most popular method of company-matched savings plans currently in use. Offering substantial tax benefits and (depending on the nature of the investment in which the plan participates) interest rates competitive with passbook savings accounts and certificates of deposit, the 401K is an ideal addendum to an employee's pension plans and Social Security benefits.

Another benefit of the 401K is that an individual's net 401K value may be used to collateralize a loan, which brings us to a potential drawback of the 401K. Should an individual borrow against a 401K and then default the loan (or, for that matter, simply wish to use the money before reaching the age of 60), there are substantial penalties involved.

In the case of a default on a loan collateralized with a 401K, you not only lose your savings to repay the loan, but the amount needed to be withdrawn to repay the loan is subject to an outright penalty which may be as high as 10 percent and that same amount is added to your taxable income for the appropriate fiscal year. The best advice regarding a 401K is to put as much in as you can afford, and leave it alone.

Variations of company-matched savings plans (including 401K, thrift savings plans, individual retirement programs and the like) were in place at 87 percent of the flight departments.

Comparative Salaries 1986 / 1987

	1986	1987	% Increase (Decrease)
Heavy Jet (over 35,000 lb)			
Chief Pilot	\$66,000	\$70,630	7.01
Captain	51,395	55,420	7.83
Copilot	35,825	39,680	10.76
Maintenance Chief	47,000	52,165	10.98
Mechanic	33,319	33,675	1.06
Medium Jet (13,501 to 35,000 lb)			
Chief Pilot	\$57,000	\$64,581	13.30
Captain	43,000	47,905	11.40
Copilot	34,403	33,505	(2.61)
Maintenance Chief	37,000	47,628	28.72
Mechanic	31,229	32,464	3.95
Light Jet			
Chief Pilot	\$45,000	\$48,666	8.14
Captain	37,516	45,000	19.94
Copilot	29,650	36,300	22.42
Maintenance Chief	33,633	41,266	22.69
Mechanic	29,630	31,300	5.63
Turboprop (all)			
Chief Pilot	\$47,900	\$44,333	(7.44)
Captain	36,680	34,870	(4.93)
Copilot	24,748	28,180	13.86
Mechanic	29,000	28,366	(2.18)
Piston Twin			
Captain	\$30,100	\$27,500	(8.63)
Turbine Helicopter			
Captain	\$40,658	\$41,666	2.47

Gulfstream Aerospace G-II/III

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$98,000	\$91,010	7.68
Median	69,000	75,500	(8.60)
Low	42,000	55,300	(24.05)
Captain			
High	\$75,300	\$74,000	1.75
Median	56,680	57,820	(1.97)
Low	33,200	39,300	(15.52)
Copilot			
High	\$60,600	\$47,750	26.91
Median	40,400	43,120	(6.30)
Low	30,000	30,000	—
Maintenance Chief			
High	\$71,700	\$56,000	28.03
Median	53,300	53,000	0.56
Low	36,000	39,000	(7.69)
Mechanic			
High	\$48,500	\$47,000	3.19
Median	35,200	35,100	0.28
Low	21,100	24,000	(12.08)

Lockheed JetStar

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$100,000	\$76,000	31.58
Median	87,000	60,000	45.00
Low	67,000	51,800	29.34
Captain			
High	\$ 73,000	\$62,000	17.74
Median	62,000	46,750	32.62
Low	54,900	44,000	24.77
Copilot			
High	\$ 52,800	\$39,000	35.38
Median	41,100	32,900	24.92
Low	31,600	31,000	1.93
Maintenance Chief			
High	\$ 56,400	\$62,700	(10.04)
Median	52,800	45,000	17.33
Low	44,400	36,500	21.64
Mechanic			
High	\$ 39,500	\$36,500	8.21
Median	31,940	31,250	2.20
Low	28,740	22,600	27.16

Dassault Falcon 50

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$83,300	\$76,222	9.29
Median	67,000	68,500	(2.19)
Low	74,500	52,500	41.90
Captain			
High	\$64,400	\$59,200	8.78
Median	55,000	50,000	10.00
Low	50,100	37,275	34.41
Copilot			
High	\$40,400	\$39,000	3.59
Median	37,220	33,680	10.51
Low	34,840	26,000	34.00
Maintenance Chief			
High	\$71,700	\$65,200	9.97
Median	49,000	43,000	13.95
Low	41,800	35,000	19.43
Mechanic			
High	\$38,000	\$36,100	5.26
Median	34,000	30,000	13.33
Low	26,000	21,800	19.27

Canadair Challenger 600/601

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$75,000	\$75,000	—
Median	59,520	60,000	(0.80)
Low	45,000	51,500	(12.62)
Captain			
High	\$67,000	\$62,000	8.06
Median	48,000	49,000	(2.04)
Low	36,000	39,000	(7.69)
Copilot			
High	\$49,400	\$39,000	26.66
Median	40,400	33,600	19.04
Low	28,000	30,000	(6.66)
Maintenance Chief			
High	\$56,400	\$60,300	(6.46)
Median	53,560	43,000	24.55
Low	45,500	39,000	16.66
Mechanic			
High	\$38,909	\$37,362	4.14
Median	33,560	30,000	11.86
Low	16,600	22,540	(26.35)

Gates Learjet 50 Series

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$74,500	\$60,120	23.91
Median	52,000	54,860	(5.21)
Low	52,000	43,480	19.59
Captain			
High	\$52,000	\$56,800	(8.45)
Median	44,920	41,100	9.29
Low	40,000	31,000	29.03
Copilot			
High	\$40,000	\$43,100	(7.19)
Median	36,900	34,800	6.03
Low	27,000	25,000	8.00
Maintenance Chief			
High	\$46,800	\$40,240	16.30
Median	45,000	33,400	34.73
Low	35,000	29,600	18.24
Mechanic			
High	\$37,850	\$38,400	(1.43)
Median	32,000	27,000	18.51
Low	26,000	25,400	2.36

BAe HS-125-600/700/800

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$98,000	\$71,000	38.02
Median	75,000	63,000	19.04
Low	60,000	37,000	62.16
Captain			
High	\$64,700	\$56,000	15.53
Median	52,520	48,000	9.41
Low	36,000	33,000	9.09
Copilot			
High	\$45,500	\$40,300	12.90
Median	31,900	31,800	0.31
Low	30,000	22,000	36.36
Maintenance Chief			
High	\$67,000	\$52,000	28.84
Median	56,800	40,250	41.11
Low	44,000	33,000	33.33
Mechanic			
High	\$40,400	\$36,100	11.91
Median	31,200	29,000	7.58
Low	16,640	19,500	(14.66)

Matched or discounted Employee Stock Option Plans (ESOP) were a feature of the benefit packages of 33 percent of those flight departments surveyed. While stock option plans offer many advantages, especially if the company is having a good year and the stock prices are rising, one must remember that what goes up can also go down.

The price of any stock, (and therefore the value of an employee's participation in an ESOP) is subject to fluctuations occasionally brought about by illogical factors that have absolutely nothing to do with the relative worth of your company. Therefore, while heavy participation in an ESOP may be a noble testament to your faith in and loyalty to your company, if the stock goes bust so does your net worth.

Insurance benefits (generally including life, dental, major medical and long-term disability) were part of the benefits package for 97 percent of those surveyed, and the features of these programs were, by and large, standard throughout. Loss-of-license insurance, however, is beginning to be seen in more and more corporate flight departments, with a total of 15.9 percent of those surveyed currently providing company paid loss-of-license insurance for their flight crews.

Of those flight departments not offering loss-of-license insurance, a majority of those responding had provisions written into their short- and long-term disability policies covering the possibility of a pilot not being able to pass a Class 1 physical, at which point he would either be retrained by the company for a non-flying position at his current salary, or if his condition were severe enough, his long-term benefits would provide 60 to 90 percent of his salary, depending on the company and length of service.

Some companies, in addition to their standard benefit packages, offered such items ranging from company cars to health and tennis club memberships to annual visits to the Mayo Clinic. In perhaps the driest response to the question of benefits, one chief pilot of a one-aircraft operation in the Midwest pondered the question and replied "Benefits? Sure, we have benefits. We have a job, and there's a pool table next to the soda machine out back. Does that count?" Pundits (and tennis clubs) notwithstanding, the average value of employee benefits, expressed as a percentage of gross annual income was 26.9 percent.

Overall, the increases in salary and benefits packages went hand-in-hand with increased utilization of the aircraft. Utilization figures (load factor,

stage length, and hours flown per year) were, for the most part, up significantly from the previous year. The sad and unfortunate facts pertaining to flight operations no longer in existence were reflected in the words of a former chief pilot (and presently a loan officer for the bank he once flew for) who said, "It's just one of those things. When you get to the point where your products don't sell like they used to or with every third mortgage you write you end up writing it off, well, then the airplane stops looking like a tool and starts looking like a waste of money, and the next thing you know, its gone. I was lucky, though. I planned ahead and used my time off to get a Master's degree in business administration, and the bank offered me a job when we sold the airplane. I still miss flying."

The lessons learned from the survey were many, but several stand out above all. The first is that aviation is a career in which one can make a very comfortable living, and if a pilot has wisely set retirement and savings goals and more importantly met those goals, he or she can retire to a secure existence.

The second lesson learned is that, despite planning, faithful service and a cost-conscious operation, the fact is that corporate transportation is seen by many who are paying the bills as an expendable commodity; and as a result, flight crew fortunes are tied to the economic health of a company as are few others within the corporate structure.

Additionally, to assume that you will always pass a physical examination no matter what is simply not realistic. Investing your time in such things as a graduate level degree or an additional job skill, with the same care as you invest your money, may provide more peace of mind and job security in the long run.

BCA

Flight Department Managers

(Manages more than five aircraft; fleet mix of heavy jets, medium jets and helicopters; more than 10 pilots.)

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
High	\$141,000	\$112,400	25.44
Median	91,800	93,000	(1.30)
Low	60,000	82,000	(26.82)

(Manages more than four aircraft; fleet mix of heavy jets and medium jets; more than 10 pilots.)

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
High	\$94,400	\$90,000	4.88
Median	87,000	74,000	17.56
Low	80,000	49,000	63.26

(Manages more than three aircraft; fleet mix of heavy jets and turboprops; more than 10 pilots.)

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
High	\$94,300	\$88,000	7.15
Median	76,320	72,400	5.41
Low	53,500	50,000	7.00

Rockwell Sabreliner

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$74,700	\$79,900	(6.50)
Median	73,200	66,850	9.49
Low	59,200	63,400	(6.62)
Captain			
High	\$60,500	\$60,000	0.83
Median	53,560	46,100	16.18
Low	46,700	37,840	23.41
Copilot			
High	\$49,400	\$41,000	20.48
Median	36,000	38,900	(7.45)
Low	33,500	26,000	28.84
Maintenance Chief			
High	\$53,560	\$48,000	11.58
Median	47,000	42,200	11.37
Low	43,300	40,100	7.98
Mechanic			
High	\$34,000	\$40,000	(15.00)
Median	33,500	32,000	4.68
Low	31,620	19,000	66.42

Cessna Citation III

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$60,100	\$60,000	0.16
Median	51,660	55,100	(6.24)
Low	48,000	45,000	6.66
Captain			
High	\$51,900	\$51,600	0.58
Median	40,800	48,000	(15.00)
Low	34,300	37,000	(7.29)
Copilot			
High	\$35,500	\$40,000	(11.25)
Median	31,500	36,000	(12.50)
Low	24,000	33,000	(27.27)
Maintenance Chief			
High	\$55,100	\$49,000	12.44
Median	45,700	39,000	17.17
Low	31,500	34,000	(7.35)
Mechanic			
High	\$41,000	\$36,000	13.88
Median	32,800	31,500	4.12
Low	26,000	22,700	14.53

IAI Westwind 1/2

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$68,000	\$60,000	13.33
Median	65,000	48,900	32.92
Low	44,000	36,000	22.22
Captain			
High	\$50,000	\$47,940	4.29
Median	47,004	39,000	20.52
Low	38,000	34,200	11.11
Copilot			
High	\$43,900	\$36,850	19.13
Median	31,500	30,000	5.00
Low	23,000	28,000	(17.85)
Maintenance Chief			
High	\$52,000	\$47,800	29.70
Median	49,500	35,900	37.88
Low	40,000	28,000	42.85
Mechanic			
High	\$44,000	\$32,400	35.80
Median	33,350	28,880	15.47
Low	22,000	22,560	(2.49)

Dassault Falcon 20/200

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$91,400	\$75,000	21.86
Median	77,200	62,000	24.51
Low	50,000	55,000	(9.09)
Captain			
High	\$68,500	\$63,250	8.30
Median	47,500	49,120	(3.29)
Low	40,000	40,000	—
Copilot			
High	\$44,000	\$46,800	(5.98)
Median	31,900	34,920	(8.64)
Low	25,000	30,000	(16.66)
Maintenance Chief			
High	\$56,800	\$51,000	11.37
Median	44,700	40,127	11.39
Low	41,000	35,600	15.16
Mechanic			
High	\$44,200	\$45,600	(3.07)
Median	31,200	35,000	(10.85)
Low	27,320	22,700	20.35

Gates Learjet 30 Series

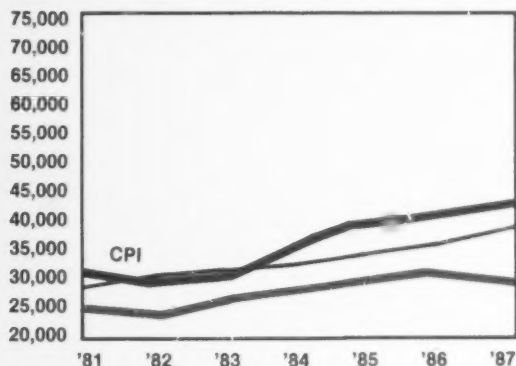
	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$81,000	NA	NA
Median	58,000	NA	NA
Low	42,000	NA	NA
Captain			
High	\$69,000	NA	NA
Median	49,033	NA	NA
Low	32,000	NA	NA
Copilot			
High	\$46,000	NA	NA
Median	34,840	NA	NA
Low	22,500	NA	NA
Maintenance Chief			
High	\$59,500	NA	NA
Median	45,500	NA	NA
Low	35,000	NA	NA
Mechanic			
High	\$43,000	NA	NA
Median	33,200	NA	NA
Low	22,800	NA	NA

Cessna Citation I/II

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$68,000	\$57,000	19.29
Median	44,000	44,000	—
Low	36,600	38,000	(3.68)
Captain			
High	\$53,520	\$48,325	10.75
Median	42,000	38,000	10.52
Low	30,000	31,000	(3.22)
Copilot			
High	\$38,000	\$29,000	31.03
Median	33,800	25,000	35.20
Low	24,000	23,000	4.34
Maintenance Chief			
High	\$49,500	\$39,000	26.92
Median	37,000	35,000	5.71
Low	33,000	24,000	37.50
Mechanic			
High	\$37,380	\$30,000	24.60
Median	30,000	29,000	3.44
Low	16,440	22,000	(25.27)

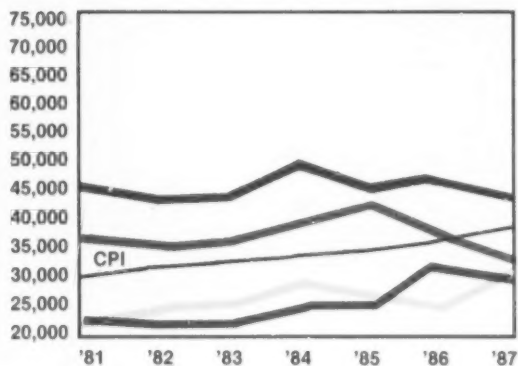
Turbine Helicopter and Piston Twin Comparative Salaries 1981-1987

— Turbine Helicopter Captain
— Piston Twin Captain



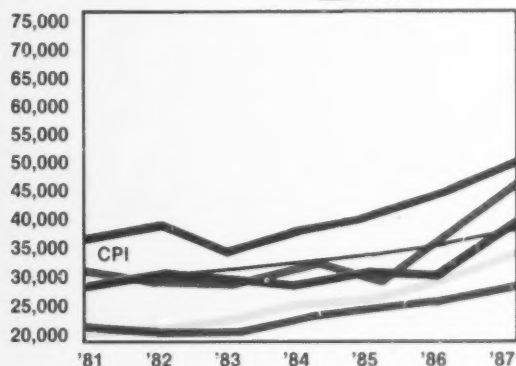
Turboprop Comparative Salaries 1981-1987

— Chief Pilot
— Captain
— Copilot
— Mechanic



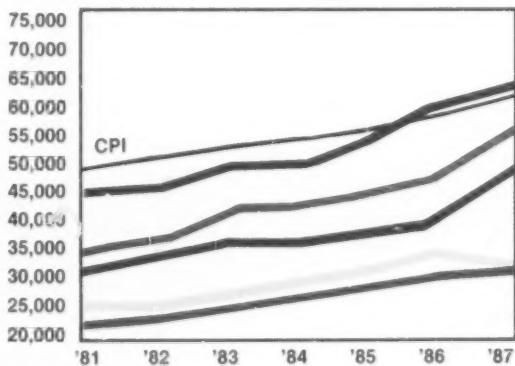
Light Jet Comparative Salaries 1981-1987

— Chief Pilot
— Captain
— Copilot
— Maintenance Chief
— Mechanic



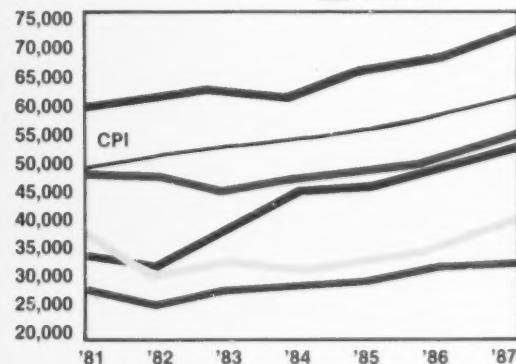
Medium Jet Comparative Salaries 1981-1987

— Chief Pilot
— Captain
— Copilot
— Maintenance Chief
— Mechanic



Heavy Jet Comparative Salaries 1981-1987

— Chief Pilot
— Captain
— Copilot
— Maintenance Chief
— Mechanic



In order to illustrate more clearly how flight department salary increases compare to annual cost of living increases, B/CA has generated graphs in which hypothetical \$30,000 and \$50,000 annual salaries are increased at the annualized Consumer Price Index (CPI) rates, which are then compared graphically with reported salary increases as provided by those flight departments interviewed by B/CA in earlier salary surveys. These CPI figures were furnished to B/CA by the Office of Management and Budget, and reflect the increase in price of select consumer goods in urban areas throughout the United States.

Dassault Falcon 10/100

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$67,000	\$69,450	(3.53)
Median	48,000	54,900	(12.57)
Low	42,500	52,600	(19.21)
Captain			
High	\$55,000	\$53,300	3.19
Median	38,000	44,750	(15.09)
Low	34,500	36,870	(6.43)
Copilot			
High	\$44,000	\$45,000	(2.23)
Median	34,500	33,950	1.62
Low	26,500	29,800	(11.08)
Maintenance Chief			
High	\$49,500	\$44,000	12.50
Median	41,800	34,900	19.77
Low	38,500	33,740	14.11
Mechanic			
High	\$38,000	\$40,000	(5.00)
Median	30,700	33,000	(6.97)
Low	19,700	28,950	(31.96)

Gates Learjet 20 Series

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$68,000	\$54,900	23.86
Median	54,000	41,800	29.18
Low	42,000	38,000	10.52
Captain			
High	\$63,000	\$48,950	28.70
Median	55,000	31,800	72.95
Low	50,000	28,000	78.57
Copilot			
High	\$46,800	\$45,000	4.00
Median	40,600	30,000	35.33
Low	18,000	27,500	(34.54)
Maintenance Chief			
High	\$47,000	\$40,000	17.50
Median	45,500	29,000	56.89
Low	35,000	28,000	25.00
Mechanic			
High	\$42,000	\$37,840	10.99
Median	33,200	26,900	23.42
Low	29,100	22,850	27.35

Heavy Turboprop

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$60,000	\$60,100	(0.17)
Median	53,000	53,840	(1.56)
Low	45,000	47,000	(4.26)
Captain			
High	\$49,700	\$51,000	(2.55)
Median	35,500	41,000	(13.42)
Low	28,000	30,000	(6.67)
Copilot			
High	\$42,000	\$36,400	15.38
Median	30,400	34,890	(12.87)
Low	23,000	28,000	(17.86)
Mechanic			
High	\$27,500	\$36,000	(23.62)
Median	26,500	30,000	(11.67)
Low	16,900	24,000	(29.59)

Beech King Air 200/300

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$68,000	\$58,360	16.51
Median	40,000	45,000	(11.11)
Low	33,500	35,000	(4.28)
Captain			
High	\$47,100	\$46,200	1.94
Median	34,100	38,000	(10.26)
Low	29,200	32,000	(8.75)
Copilot			
High	\$42,000	\$36,500	15.06
Median	27,500	29,000	(5.17)
Low	25,000	25,000	—
Mechanic			
High	\$44,000	\$40,117	9.67
Median	28,600	28,000	2.14
Low	10,600	22,880	(27.44)

Piper Cheyenne I/II/III/400

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$47,000	\$42,400	10.84
Median	34,752	34,900	(0.42)
Low	23,000	31,950	(28.01)
Copilot			
High	\$35,000	\$36,400	(3.84)
Median	27,000	26,000	3.84
Low	18,000	24,000	(25.00)

Beech King Air 90/100

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	\$58,000	\$52,000	11.53
Median	40,000	44,000	(9.09)
Low	35,000	38,000	(7.89)
Captain			
High	\$45,000	\$38,000	18.42
Median	36,000	35,100	2.56
Low	23,000	29,725	(22.52)
Copilot			
High	\$33,800	\$33,000	2.42
Median	28,000	27,200	2.94
Low	24,000	24,800	(3.22)
Mechanic			
High	\$35,000	NA	—
Median	30,000	NA	—
Low	22,000	NA	—

Mitsubishi MU-2

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$46,000	\$39,900	15.29
Median	34,000	32,400	4.94
Low	22,500	25,000	(10.00)
Copilot			
High	\$38,700	\$37,840	2.27
Median	28,000	26,500	5.66
Low	22,000	21,000	4.76

Cabin Class Piston Twin

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$46,800	\$37,030	26.38
Median	27,500	30,000	(8.33)
Low	22,500	22,000	2.27

Cabin Crew
1987 Reported Salaries

High	\$37,600
Median	27,000
Low	22,500

Office Personnel
(Secretaries, Admin. Assist.)
1987 Reported Salaries

High	\$39,000
Median	18,500
Low	12,000

Schedulers/Dispatchers
1987 Reported Salaries

High	\$44,300
Median	25,000
Low	20,000

Aircraft Cleaners
1987 Reported Salaries

High	\$20,000
Median	14,500
Low	11,980

Agusta A109

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$42,500	\$42,000	1.19
Median	36,500	37,200	(1.89)
Low	30,000	34,880	(14.00)

Bell 222

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$47,100	\$42,000	12.14
Median	39,000	37,200	4.84
Low	39,000	34,880	11.81

McDonnell Douglas 500

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$41,900	\$41,000	2.20
Median	34,300	37,800	(9.26)
Low	27,000	32,400	(16.67)

Bell 206 JetRangers

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$50,700	\$49,500	2.42
Median	40,000	42,800	(6.54)
Low	24,000	33,750	(28.88)

MBB BO-105

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$57,400	\$50,100	14.57
Median	42,500	42,870	(0.86)
Low	42,000	33,660	24.77

Sikorsky S-76

	1987 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	\$69,000	\$53,000	30.18
Median	57,700	45,000	28.22
Low	42,000	28,000	50.00

Aircraft Utilization

Aircraft Type	Average Load Factor (1987)	Average Load Factor (1986)	Average Stage Length (1987)	Average Stage Length (1986)	Hours Flown Per Year (1987)	Hours Flown Per Year (1986)
Gulfstream G-II/-III	6.05	4.50	1,241	1,014	553	437
Challenger 600/601	3.50	3.50	564	500	450	555
JetStar	3.25	2.60	600	490	531	328
Falcon 50	3.30	4.20	990	650	566	620
Sabreliner	3.30	3.00	640	475	340	375
HS-125	4.10	3.27	461	644	425	556
Falcon 20/200	4.60	4.80	718	472	393	497
Learjet 50 Series	4.00	3.10	650	500	525	375
Citation III	4.40	3.00	633	482	783	450
Westwind 1/2	4.36	4.00	618	416	598	350
Learjet 30 Series	3.15	NA	622	NA	462	NA
Learjet 20 Series	3.30	2.90	502	390	550	410
Falcon 10/100	3.00	3.20	412	500	479	480
Citation I/II	4.35	2.50	398	375	409	500
Heavy Turboprops (all)	7.40	5.40	263	350	400	325
King Air 200/300	5.02	3.50	222	310	447	450
King Air 90/100	3.40	3.10	236	270	438	600
Cheyennes (all)	3.30	3.00	355	225	410	390
Turbine Helicopters	3.50	3.10	72	64	550	429
Piston Twins	1.95	1.50	155	150	295	250

As in past years, this survey was conducted by telephone with management personnel to insure accurate and unbiased results. Research indicates that mail surveys can be misleading and their results inflated as respondents consciously or unconsciously attempt to load the dice in their favor. B/CA has a working base of over 100 control flight departments, selected randomly by geographical area and equipment operated, that we contact each year. To ensure confidentiality the names of responding companies are separated from the response itself. We believe that a telephone survey affords greater accuracy and eliminates ambiguities.



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Business and commercial **Aviation**[®]

DECEMBER 1987 \$4.00



**Corporate
Interior
Overview**



The Fortune 500 Fleet



Beech's New C90A King Air

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December 1987

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THE COVER

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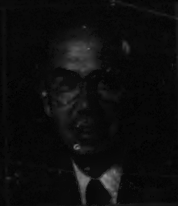
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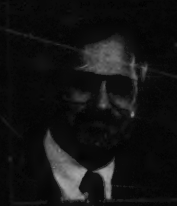
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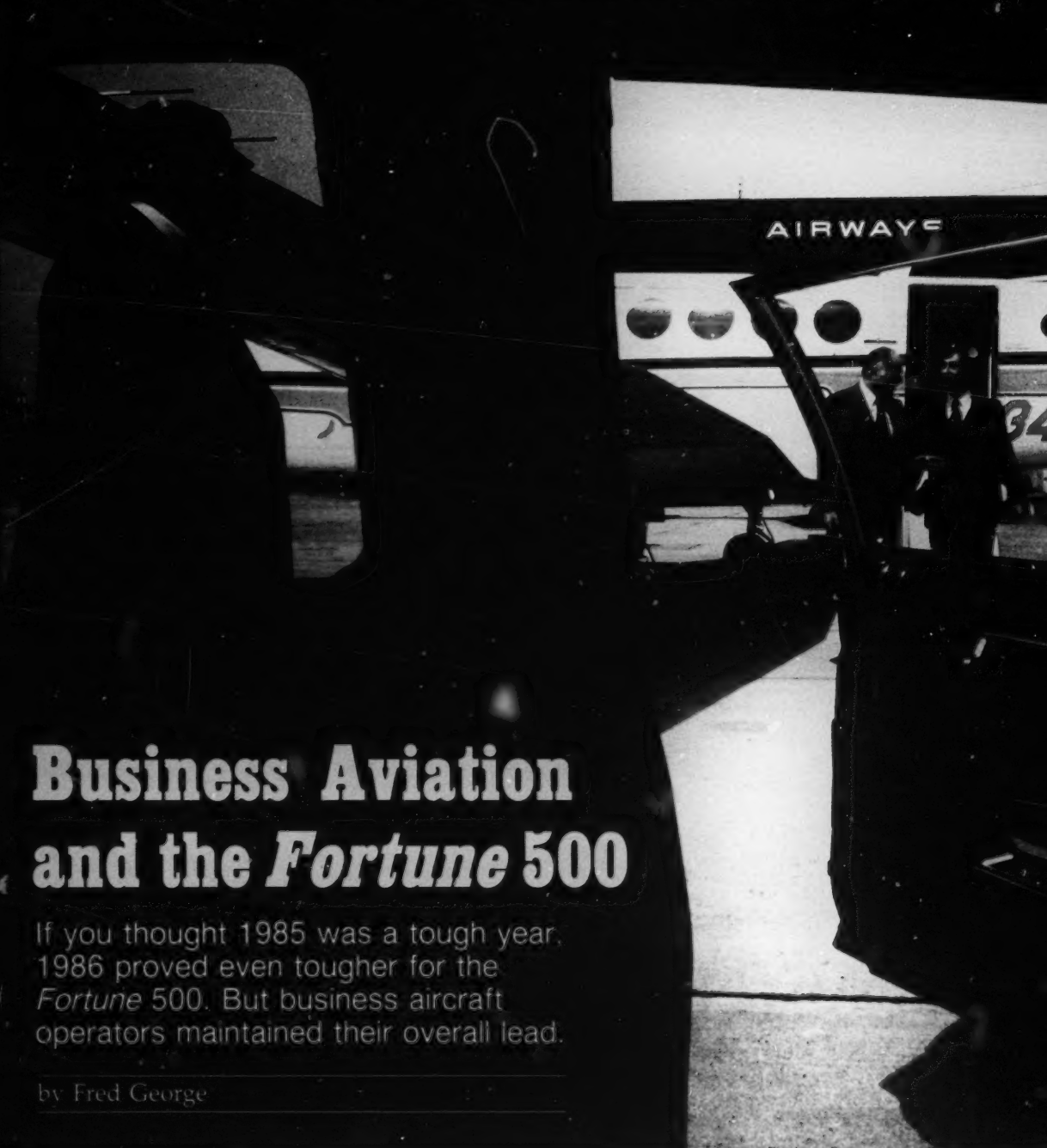
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Business Aviation and the *Fortune* 500

If you thought 1985 was a tough year, 1986 proved even tougher for the *Fortune* 500. But business aircraft operators maintained their overall lead.

by Fred George

For 1986, corporate America's economic performance was as harrowing as a trip through a Texas thunderstorm. Every industrial sector was uniquely and profoundly affected. The gusts and shears, bolts and starts provided a painful, yet strengthening journey for some companies...and a fearful, perilous plunge towards an economic apocalypse for others.

Black Monday, October 19, 1987 vividly reminded us that there is more turbulence ahead.

As evidence of this trauma, last year the *Fortune* 500's overall revenue fell almost five percent from 1985's record \$1.8 trillion to \$1.7 trillion. Profitability was off \$4.9 billion, a 6.7-percent drop from 1985's \$69.6 billion. Similar downtrends were observed in number

of employees, value of assets and return to investors.

Were it not for the more specific research accomplished by Wichita's Aviation Data Service, Inc. (AvData), the firm that gathers and supplies *Fortune* 500 data for B/CA, one might brush investment in most U.S. industrial firms as a poor decision. Thankfully, there are several key factors (includ-



ing the comparative performance of business aircraft operators versus non-operators) that differentiate long-term winners from losers.

AvData's performance statistics indicate that the sales of both business aircraft operators and non-operators declined in 1986. But the aircraft operators held the decline to just 2.8 percent while non-operators plummeted 18.6

percent compared to a year earlier. The two groups chalked up similar scores in profitability drops. Compared to 1985, the business aircraft operators were off 5.5 percent and non-operators were down 18.5 percent.

More telling is the Net Income as a Percent of Sales record for the two groups. While the aircraft operators didn't quite match 1985's four-percent Net Income on Sales, their 3.9-percent Net on Sales was quite respectable compared to the non-operators 2.6-percent net return. AvData points out that relative declines were least in the higher ranks of both groups, with the Blue Chips exhibiting substantially more stability amidst ever-changing market forces.

In addition, the business aircraft operators achieved more than 10-percent Net Income as a Percent of Stockholders' Equity, almost one fifth better than ground-bound firms.

While the non-operators mourned their misfortunes, business aircraft owners invested in new equipment to prepare for better times. The former group lost \$7.6 billion in assets, but the aircraft operators re-fortified their firms with more than \$49 billion in new tools and supplies.

Unfortunately both groups had to lay off employees. However, the average business aircraft operator lost just over 1,000 workers while the average non-operator dismissed almost twice as many.

Again as in 1985, there were 70 money losers among the *Fortune* 500—and they lost more money last year than the year before. The minimum sales for gaining entry into the *Fortune* 500 dropped about one percent as well, down in 1986 to \$420 million. But average numbers tell only one part of the story.

SIC Scorecard

Within the more than two dozen Standard Industrial Classifications used to categorize industrial America, *Fortune* singles out pharmaceutical and tobacco companies as being the highest achievers when scored on return on sales. Business aircraft operator A.H. Robins, a pharmaceutical company, led the way both in Net Return on Sales and Return on Stockholders' Equity. In contrast, the non-operating medicine

makers edged out their flying competitors for both those spots when all such companies were counted.

Tobacco firms ranked highest in revenue increases. Non-operators were no slouches, boosting their sales an impressive 19.8 percent compared to a year earlier. Aircraft operators' revenues soared a dizzying 46 percent from 1985, however. Each tobacco group achieved the same 6.9 percent Net Income on Sales.

Food producers and processors continued to do well, achieving a healthy 13.6-percent return on Stockholders' Equity. Also, aircraft operators scored about 50-percent higher in Net Income on Sales than did surface-bound food companies.

Tyson Foods, a long-time business aircraft operator, has topped this list for all *Fortune* 500 companies for a decade, returning an average 58.27 percent to investors during this period.

Comparative results from other classifications were mixed. Aircraft operator's Net Return to Stockholders increased from 1985 for textile makers, paper producers, chemical companies, building materials firms and beverage enterprises—and it was a substantially higher gain than for non-operating companies within those same groups. But, just the opposite result was true for clothing manufacturers, publishers, pharmaceutical firms and cosmetics companies where non-operators outpaced aircraft operators for improvement in Net Return to Stockholders compared to the previous year.

Nowhere did a manufacturing sector get hit harder than in metals. Both aircraft operators and non-operators sank further into the red, with business aircraft operators faring worse. Another closely related specialty, the metal products group, experienced similar disappointing performance. In that group, the non-operators surpassed aircraft operators in Net Return on Sales.

Aerospace similarly was flat. However, the non-operating aerospace companies preserved their 1985 performance superiority over business aircraft operators.

There was plenty of other bad news associated with industrial America's performance last year. The oil industry continued its depression, but the business aircraft operators in this group were hurt less than ground-bound businesses. The Net Return on Sales was nothing to brag about, the business aircraft operators made modest gains,

Figure 1

Average Net Income Per Employee

Fortune 1000

Fortune 500

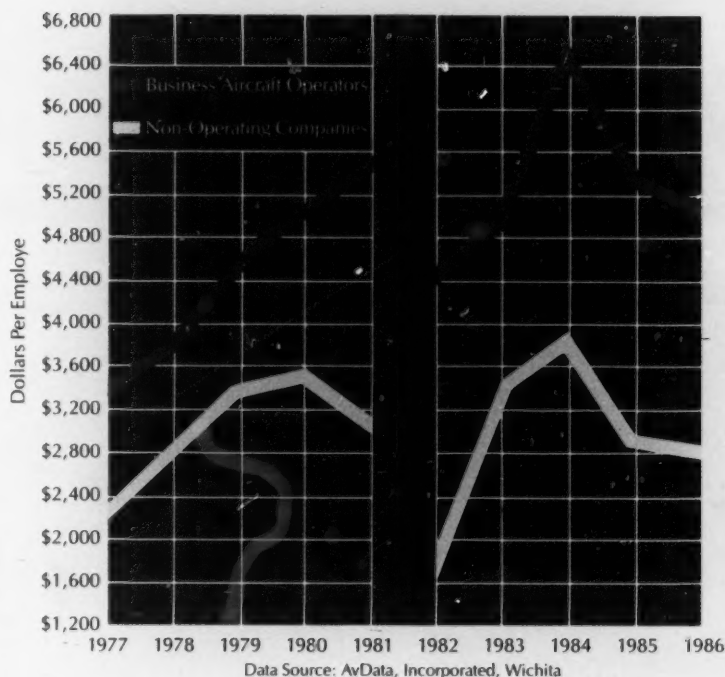


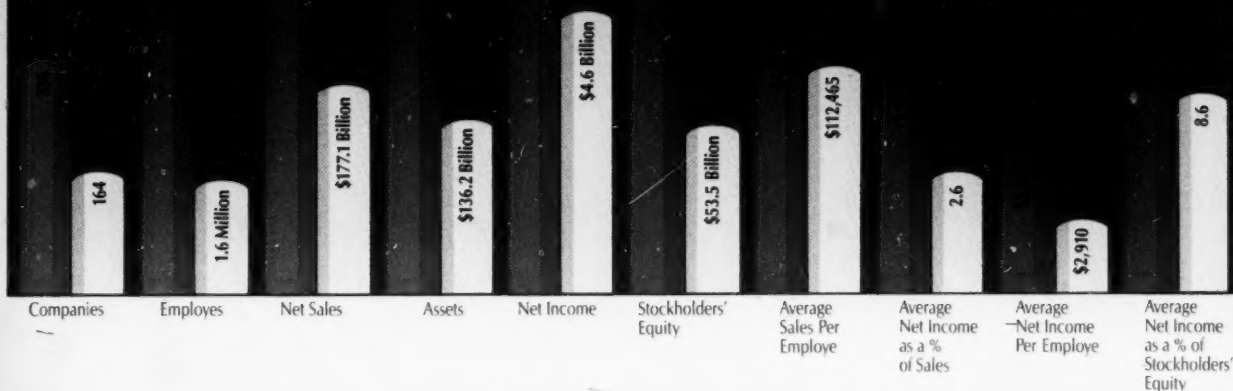
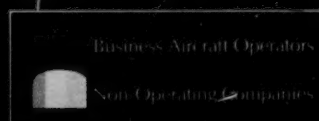
Figure 2

Group	Companies		Aircraft Operated
	Operators	Non-Operators	
Mining, Crude-Oil Production	8	4	17
Food	34	19	101
Tobacco	3	1	27
Textiles	5	3	17
Apparel	5	5	15
Furniture	4	1	6
Forest Products	24	9	98
Publishing, Printing	14	5	25
Chemicals	29	15	101
Petroleum Refining	25	7	224
Rubber Products	11	4	32
Leather	0	1	9
Building Materials	14	4	3
Metals	13	9	7
Metal Products	15	6	43
Electronics	31	16	136
Transportation Equipment	7	2	5
Scientific and Photo Equipment	10	7	26
Motor Vehicles and Parts	12	7	63
Aerospace	15	2	168
Pharmaceuticals	13	3	44
Soaps, Cosmetics	4	6	7
Computers, Office Equipment	9	14	69
Industrial and Farm Equipment	25	8	63
Jewelry, Silverware	1	0	3
Toys, Sporting Goods	1	4	3
Beverages	6	2	33
Average or Total	336	164	1488

Data Source: AvData, Incorporated, Wichita

Figure 2

Fortune 500 Summary



Data Source: AvData, Incorporated, Wichita

Sales Per Employee		Net Income As a Percent of Sales		Net Income Per Employee		Net Income As a Percent of Stockholders' Equity	
Operators	Non-Operators	Operators	Non-Operators	Operators	Non-Operators	Operators	Non-Operators
\$148,149	\$242,156	3.5	1.3	\$ 5,206	\$ 3,120	6.5	4.5
126,716	187,210	3.2	2.1	4,088	3,857	13.7	13.6
159,744	65,171	6.9	6.9	11,067	4,525	23.3	14.2
69,111	62,253	3.9	-0.9	2,661	-543	10.5	-5.5
51,720	112,778	4.0	4.4	2,070	4,977	11.5	21.3
75,567	61,683	5.9	2.1	4,481	1,289	15.9	7.0
135,519	107,576	4.8	5.8	6,481	6,232	10.0	14.5
104,381	93,460	9.2	10.7	9,579	9,962	19.8	25.8
165,757	204,223	4.9	5.0	8,150	10,264	12.6	13.4
392,428	300,375	2.7	1.0	10,480	2,997	5.9	6.0
95,086	86,348	1.7	0.3	1,641	300	5.5	1.6
0	53,849	0.0	-6.3	0	-3,393	0.0	-109.0
112,866	99,344	4.7	0.3	5,328	277	14.8	0.8
140,724	117,051	-8.8	-2.4	-12,391	-2,837	-28.4	-8.1
92,598	92,097	2.8	3.8	2,632	3,471	9.1	10.6
89,409	66,860	3.6	-0.1	3,223	-40	9.2	-0.1
96,579	133,642	3.0	1.3	2,918	2,047	7.4	9.3
90,226	84,768	5.4	4.5	4,913	3,780	10.8	8.6
131,647	112,266	3.9	0.5	5,164	507	14.6	-72.3
96,735	106,930	2.9	7.4	2,844	7,934	12.1	13.4
108,448	116,938	11.8	12.2	12,844	14,304	22.0	27.3
204,109	166,928	2.9	3.5	5,968	5,763	17.1	17.1
104,334	104,452	7.6	2.2	7,932	2,344	11.8	5.7
89,557	101,862	0.2	-2.7	154	-2,708	0.4	-8.1
64,399	0	6.9	0.0	4,462	0	20.9	0.0
115,636	102,470	0.1	0.3	74	359	0.3	1.3
96,176	103,991	7.6	10.6	7,275	10,995	18.0	20.8
\$131,112	\$112,465	3.9	2.6	\$ 5,120	\$ 2,910	10.2	8.6

while non-operators slumped into a distant second place, reversing the 1985 lead. Additionally (and in contrast to 1985), oil producers and refiners with business aircraft achieved a better Net Return to Shareholders than did non-operators.

Wall Street pundits are quick to observe that the automobile and oil industries are at opposite ends of an economic seesaw. As the oil industry's suffering continued, the auto industry scored big gains in sales, but incentive financing and bloated inventories ate into profitability. Aircraft operating car makers experienced marked declines in Net Return on Sales and Net Return to Shareholders. One of the sole remaining non-operators, American Motors, fared less well. It was swallowed by Chrysler Corporation, a "non-operator" that extensively charters business aircraft rather than operating its own aircraft.

We hasten to add that one should not underestimate Wall Street's year-long, volatile fluctuations in stock prices when evaluating the real value of stockholders' equity. In 1986, the *Fortune* 500's stock value swelled to almost \$668 billion, a 3.5-percent increase compared to 1985. Ironically, industrial America's overall paper equity went up although its sales and income went down.

Such unlikely deviations cannot help but distort the Net Return on Stockholders' Equity ratio that we have traditionally used to gauge the relative economic performance of the aircraft operators and non-operators within the *Fortune* 500.

The Fortune 500 Fleet

The departure of aircraft operators Beatrice and General Foods from the ranks of the 500 are prime examples of the reducing effect that continuing mergers, acquisitions and leverage buyouts have on the fleet.

In light of the *Fortune* 500's rough times in 1986, the 1.2-percent drop in the size of the fleet to 1,400 turbine aircraft comes as no surprise. The number of aircraft in each of the seven categories shrank, but one shouldn't attribute such a decline to a lack of brokerage activity. The 500 acquired 181 used or new aircraft last year while selling or trading 198 units.

However, the total fleet number decreased as it has for several years. Yet, the aviation community received good news about the number of *Fortune* 500

companies that operate aircraft: In 1986 it increased to 336, eight more than in 1985 according to AvData's tally. But, the overall equity of the fleet shrank from \$4.28 billion in 1985 to \$3.67 billion last year, representing an average \$380,000 decrease in the value of each aircraft. Such a decline reverses the increasing trend experienced in recent years, a likely reflection of the brisk sales of used, rather than new, aircraft.

The changes in the relative share of various types of turbine aircraft continued in 1986. During the last decade, the nation's 200 largest industrial companies have demonstrated a preference for heavy-iron, and today they operate about the same number of heavy jets as they did in 1976. During the early 1980s, the fraction of those aircraft operated by such firms dropped off briefly, but heavy jets now make up just under one-quarter of their fleets, as was the case a decade ago. As the age of some of these larger aircraft increases,

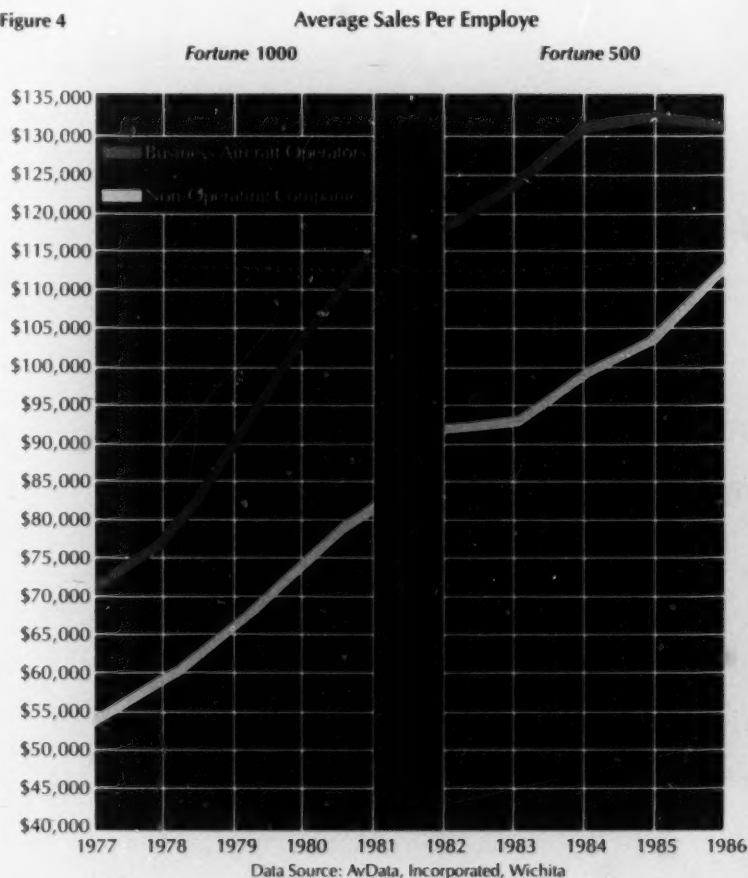
they are retired from the fleet. In 1986, the total number of these aircraft in operation with the *Fortune* 500 dropped to 294, a decline of five aircraft from the previous year.

Smaller companies have operated fewer heavy jets during the past 10 years, and that fraction continues to decrease at a rate somewhat proportionate to the firm's ranking within the 500. Only one out of 11 turbine aircraft operated by such firms are heavy jets. Overall, the heavy jet class counts for one out of five aircraft operated by the *Fortune* 500, making that type the second most popular with such firms.

There's continuing good news for the medium business jet community. AvData informed us that this category remains the largest component of the *Fortune* 500 fleet, a first-place dominance these aircraft have maintained for 12 years. The 581 medium jets now make up an impressive 41.5 percent of the *Fortune* 500 fleet.

Apparently the appeal of medium

Figure 4



jets is greatest for smaller *Fortune* 500 companies. These aircraft outnumber all other turbine aircraft types combined in the fleet owned by firms ranked 301 to 500.

Third place is held by light turboprops, accounting for just under 19 percent of the fleet. Jet props are the second most popular type of aircraft with smaller *Fortune* 500 companies, but larger companies favor heavy jets as their second choice after medium jets.

The light jet market continued its decline in popularity with the 500 last year. AvData possibly attributes this trend to the availability of attractively priced, used medium jets.

Twin turbine helicopters gained popularity with larger *Fortune* companies during the early 1980s, a trend that continues today. However, smaller companies have been erratic in favoring rotary wing aircraft. Overall, the twin turbine helicopter category showed a slight increase.

Among the 26 industrial classifica-

tions of companies that operate aircraft, the largest number of aircraft operators are the food processors. Contributing to this component was the change in business character of Occidental Petroleum, the firm that acquired Iowa Beef Processors six years ago. The majority of the former oil company's revenue now comes from food products, causing *Fortune* magazine to quip, "Oxy Pete is now Oxy Meat."

Food processing companies number almost one out of 10 *Fortune* aircraft operating companies, yet they fly less than eight percent of the total aircraft. The largest number of aircraft—16 percent of the *Fortune* 500 fleet—are operated by the oil companies, which account for 7.4 percent of the aircraft operating firms within the *Fortune* 500 industrials.

One out of four companies that fly their own aircraft have single aircraft operations. Half of the operators among the 500 have fleets of three or more aircraft. And seven companies

operate 20 or more aircraft. The largest company fleet has 39 aircraft.

Decline and Renewal

Despite the mixed results attained last year by the nation's large industrial companies, we found promising signs from medium-size aircraft operating firms that are likely to join the ranks of the 500 next year. According to *Fortune*, these fast growing companies have resisted the move to diversification, focusing instead on narrow markets.

AFG Industries of Irvine, California is one such firm, a glassmaker that now quite clearly dominates the specialty glass market for microwave oven doors, shower stalls and outdoor table tops. Rather than lock horns with window, windshield and water-glass makers, AFG carved out its market niche, achieving an average three-year growth rate of 23.9 percent. The firm operates three business jets and a twin turbine helicopter.

Innovative turboprop operator Guilford Mills found a new market for warp knitting, a manufacturing specialty that most other textile firms thought was best-suited to lingerie. The Greensboro, North Carolina firm adapted the process to make automobile headliners, mattress fabric and even water purification filters. From 1983 to 1986, Guilford Mills revenues increased 17.8 percent annually.

Newell Industries of Freeport, Illinois operates three aircraft and has ambitions of becoming a single-source supplier of home hardware and utensils. Some industry analysts scoff at the firm's high-flying expansion and acquisition plans, but those pundits stop chuckling when they look at its growth: an average 19.2-percent increase for each of the last three years.

Such firms and other operators within this group of mid-size firms have achieved notable results, but so have companies that choose not to operate aircraft. Yet, preliminary research indicates that more than a few of these apparent "non-operators" are management or charter clients of commercial business aircraft firms.

When the 1987 performance data for industrial firms are published, it's likely that the names of the business aircraft operators will have changed, but the results should be the same. On balance, *Fortune* 500 firms that operate aircraft continue to outperform non-operators, year after year. We eagerly look forward to next year's report. **B&A**

